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Practice Diameter And Radius Worksheet

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Part 1: Foundational Knowledge

What is the radius of a circle if its diameter is 10 cm?

Hint: Remember that the radius is half of the diameter.

○ 5 cm
○ 10 cm
○ 15 cm
○ 20 cm

Which of the following statements are true about the diameter of a circle? (Select all that apply)

Hint: Consider the definitions of diameter and radius.

☐ It is twice the radius.
☐ It is half the circumference.
☐ It passes through the center of the circle.
☐ It is the same as the radius.

Define the term "circumference" and explain how it relates to the diameter and radius of a circle.

Hint: Think about the distance around the circle.

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List the formulas for calculating the circumference of a circle using both the radius and the diameter.

Hint: Consider the relationships between radius, diameter, and circumference.

1. Formula using diameter:

2. Formula using radius:

Part 2: comprehension

If the radius of a circle is doubled, what happens to the diameter?

Hint: Consider the relationship between radius and diameter.

◯ It remains the same.
◯ It doubles.
◯ It triples.
◯ It quadruples.

Which of the following are correct relationships in a circle? (Select all that apply)

Hint: Think about the formulas and definitions related to circles.

☐ Circumference = π × Diameter
☐ Diameter = 2 × Radius
☐ Radius = Circumference / π
☐ Diameter = Circumference / 2

Explain how changing the radius of a circle affects its circumference and provide an example with numbers.

Hint: Consider the formulas for circumference.

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Part 3: Application

A circle has a circumference of 31.4 cm. What is the approximate radius of the circle? (Use π ≈ 3.14)

Hint: Use the formula C = 2πr to find the radius.

○ 5 cm
○ 10 cm
○ 15 cm
○ 20 cm

Given a circle with a diameter of 8 cm, which of the following are true? (Select all that apply)

Hint: Consider the relationships between diameter, radius, and circumference.

☐ The radius is 4 cm.
☐ The circumference is approximately 25.12 cm.
☐ The circumference is approximately 50.24 cm.
☐ The radius is 8 cm.

Calculate the diameter of a circle with a circumference of 62.8 cm. Show your work.

Hint: Use the formula C = πD.

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Part 4: Analysis

If two circles have the same circumference, what can be said about their diameters?

Hint: Consider the definition of circumference.

○ They have different diameters.
○ They have the same diameter.
○ One is twice the diameter of the other.
○ The diameters are unrelated to the circumference.

Analyze the following statements and select the ones that correctly describe the relationship between the radius and circumference. (Select all that apply)

Hint: Think about how radius affects circumference.

☐ Doubling the radius doubles the circumference.
☐ Halving the radius halves the circumference.
☐ The circumference is directly proportional to the radius.
☐ The circumference is inversely proportional to the radius.

Compare and contrast the formulas for circumference using radius and diameter. Discuss any advantages of using one formula over the other in specific scenarios.

Hint: Consider the context in which you are calculating circumference.

Part 5: Evaluation and Creation

A designer wants to create a circular table with a circumference of 150 cm. What should be the radius of the table?

Hint: Use the formula $C = 2\pi r$ to find the radius.

○ 23.9 cm

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○ 47.8 cm
○ 75 cm
○ 150 cm

Evaluate the following scenarios and select the ones where the given radius and diameter are correct for a circle with a circumference of 31.4 cm. (Select all that apply)

Hint: Use the relationships between radius, diameter, and circumference.

☐ Radius = 5 cm, Diameter = 10 cm
☐ Radius = 10 cm, Diameter = 20 cm
☐ Radius = 2.5 cm, Diameter = 5 cm
☐ Radius = 15 cm, Diameter = 30 cm

Design a real-world problem involving a circle where you need to find either the radius, diameter, or circumference. Provide a solution to your problem.

Hint: Think about a scenario where circles are relevant.

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